DESCRIPTION 229/119

METHODS AND DEVICES FOR MASS TRANSPORT ASSISTED OPTICAL ASSAYS

The present invention is a continuation of U.S. application serial no. 08/950,963, filed October 15, 1997 (pending), which is a continuation-in-part of U.S. application serial no. 08/742,255, filed October 31, 1996 (pending), each of which hereby is incorporated by reference.

Background of the Invention

The present invention relates to methods and devices useful for analytical testing. Such testing includes, but is not limited to medical diagnosis and environmental testing.

~~This application is a continuation-in-part of U.S. Serial No. 08/742,255 filed October 31, 1996, hereby incorporated by reference herein, including drawings.~~

The following is a discussion of relevant art, none of which is admitted to be prior art to the present invention.

A flow-through, or porous, assay device is described in U.S. Patent No. 4,632,901 by Valkirs, et al. In this method an immunoassay is performed on a membrane or filter which is coated with an antibody and is capable of removing an analyte from a sample applied to the membrane. Visualization is based on the analyte dependent capture of a secondary reagent which will act on a substrate and produce a colored, particulate product which will non - specifically adhere to the membrane only where the secondary reagent is present. Numerous modifications to this basic design have been introduced including colored, and/or metallic particles (U.S. Patent No. 4,775,636) attached to the secondary reagent for visualization, and

Appendix B: Clean specification replacement page

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Appendix C: A mark-up version of amended claims, indicating the changes

51. (Amended) A support comprising a surface on which an assay for an analyte of interest can be performed, comprising:

an attachment layer comprising diamond-like carbon on the support surface, wherein the attachment layer is adapted for capture[s] of the analyte of interest for detection in the assay by binding the analyte directly to the diamond-like carbon.

53. (Amended) A support according to claim 51, wherein [the] a degree of hydrophobicity of the attachment layer [is determined by varying the] results from a preselected sp^2 and sp^3 character of the diamond-like carbon.

54. (Amended) A support according to claim 51, wherein the diamond-like carbon is [configured to function as] an antireflective layer.

57. (Amended) A support according to claim 51, wherein the support [is configured to provide] provides laminar flow through or across the support.

67. (Amended) A support comprising a surface on which an optical assay for an analyte of interest can be performed, comprising:

an attachment layer comprising a layer of diamond-like carbon of between about 50 A to about 500 A in thickness on the support surface, wherein said attachment layer [specifically captures] comprises a capture molecule bound to said diamond-like carbon for specific capture of said analyte by binding said analyte to said capture molecule [a capture molecule bound to the diamond-like carbon].

69. (Amended) A support according to claim 67, wherein [the] a degree of hydrophobicity of the attachment layer [is determined by varying the] results from a preselected sp^2 and sp^3 character of the diamond-like carbon.

70. (Amended) A support according to claim 67, wherein said diamond-like carbon is [configured to function as] an antireflective layer.

73. (Amended) A support according to claim 67, wherein said support [is configured to provide] provides laminar flow through or across said support.